REMARKS

Claims 18-37 are pending in the present application. In the Office Action mailed May 2, 2006, the Examiner rejected claims 18-37 under 35 U.S.C. §103(a) as being unpatentable over Blankenship et al. (UPS 5,357,076) in view of Remy et al. (EP 1,117,279).

The Examiner rejected claim 18 under 35 U.S.C. 103(a) as being unpatentable over Blankenship in view of Remy. Applicant has amended claim 18 to clarify the meaning of the term "operating parameter." The amended claim now calls for a means of setting a plasma cutting process operating parameter in addition to a means of preventing initiation of the plasma cutting process based on an incompatible consumable. Therefore, "operating parameter" must be a parameter during "operation" and must be more than simply an on/off control.

With regard to claim 18, the Examiner stated that "Blankenship teaches the identification of the type of torch" and "Remy is applied for teaching . . . that in lieu of sensing a torch head for identification purposes, individual torch consumable parts . . . can be identified." *Office Action, May 2, 2006, p. 2.* The Examiner concluded that "[i]n view of this teaching it would have been obvious to modify the Blankenship system to sense individual components and vary the cutting parameters accordantly, in lieu of just identifying the torch head, since such modification would enable finer and more accurate tailoring of the torch to the process chosen." *Id.* Applicant believes the position of the Examiner is a clear indication of the use of impermissible hindsight as the references themselves fail to suggest or infer such a modification of the Blankenship system. *See* MPEP §2141(II)(C).

Blankenship teaches a "torch assembly [that] includes the housing on one end, a long flexible cable and a plug on the other end" *(col. 1, lns. 29-30)* and "an identification circuit for identifying unique torch assemblies." *Abstract.* Specifically, Blankenship discloses an identification circuit that may be located within the torch assembly, for example, in the torch housing, as shown in Figure 5, or in the plug. *See Col. 3, lns. 18-20, 33-35.* The identification circuit is constructed of two separate resistors that can be used to "identify[] several hundred different specific types *of plasma torches.*" *See Col. 3, lns. 33-60 (emphasis added).* Once the torch assembly is identified, "the power levels, gas flows and other parameters of the control station can be automatically adjusted by the onboard computer." *Col. 2, lns. 57-59.* This system merely sets all the parameters to preset parameters based on the torch as a whole.

The invention disclosed in Remy, on the other hand, relates to a torch that "is equipped with a system for the recognition and identification of the torch head or wearing parts that equip said torch head." ¶1. An identification element, located within the torch head or other

consumable part of the torch, "makes it possible to verify that the torch head and/or the wearing parts . . . are compatible with the elected process and with the range of current amperages to be applied." See ¶¶41, 57. Based on the results of the verification process, the electrical current supply to the torch is either authorized or prohibited--on or off. *See* ¶50.

If combining Blankenship and Remy, one skilled in the art would not arrive at the modification of Blankenship that the Examiner claims is obvious. From Remy, it may be obvious to authorize or prohibit electrical supply based on the identification of a torch subassembly by a first identification circuit. From Blankenship, it may be obvious to adjust control station operating parameters based on the identification of the entire torch assembly by a second identification circuit. Combining these two references, one skilled in the art would either arrive at an invention that (I) combines the two circuits in one, or (II) that contains two identification circuits: one identification circuit that identifies the specific torch subassembly, including the torch head and any consumables, and a second identification circuit that identifies the entire torch assembly, including the torch, power cord, and plug. Both identification circuits serve very different purposes. Specifically, the first identification circuit authorizes or prohibits electrical current supply to the torch based on whether correct components are used, and the second identification circuit adjusts control station operating parameters based on the entire torch assembly. There is no teaching or suggestion in either reference or the combination of the two references, however, of a consumable identification system that changes operating parameters based on the specific consumable.

Alternatively, the two circuits of Blankenship and Remy could be combined in a single circuit wherein the circuit shown generally as 300 in Figure 5 of Blankenship is connected to the circuit of Remy which authorizes or prohibits operation based on whether the correct components were used in the torch. Based on these two references, and not the present invention, such a combination would result in the circuit 300 being open when the incorrect components were assembled in the torch--thereby prohibiting the operation of the torch. If the correct components were assembled in the torch, circuit 300 would be closed, thereby authorizing operation of the torch, and that circuit 300 would then be able to identify the torch and set all of the operating parameters based on the identified torch. Again, the combination of these two references does not render the present claims obvious in that there is no teaching or suggestion to change operating parameters based on the detection of a type of consumable within the torch. Accordingly, that which is called for in claims 18 is not shown, disclosed, taught, or suggested in

the art of record. As such, Applicant believes claim 18 and all claims that depend therefrom are patentably distinct over the art of record.

The Examiner also rejected claim 21 under U.S.C. 103(a) as being unpatentable over Blankenship in view of Remy. Applicant has also amended claim 21 to clarify the controller configuration and make certain of the meaning of "operating parameter." The amended claim now specifies that the controller not only (1) adjusts an "operating parameter" of the power source, but also (2) allows initiation prevention of the plasma cutting process, based on the type of plasma torch consumable component. Therefore, while Applicant believes that "operating parameter" is clear in that it is a parameter during operation (not simply the on/off states), but because the claim specifically also calls for prevention of initiation of the plasma cutting process, the term "operating parameter" must be more than on/off states.

In rejecting claim 21, the Examiner again stated that "it would have been obvious to modify the Blankenship system to sense individual components and vary the cutting parameters accordingly." *Office Action, May 2, 2006, p. 2.* However, as explained above with respect to claim 18, while Blankenship may disclose identifying a torch assembly and adjusting operating parameters and Remy may disclose identifying some torch subassembly such as a torch head or consumable and authorizing or prohibiting current supply, a combination of the two references fails to teach or suggest a consumable identification system that adjusts operating parameters based on that consumable. Accordingly, that which is called for in claims 21 is not shown, disclosed, taught, or suggested in the art of record. As such, Applicant believes claim 21 and all claims that depend therefrom are patentably distinct over the art of record.

The Examiner also rejected claim 30 under U.S.C. 103(a) as being unpatentable over Blankenship in view of Remy. Applicant has also amended claim 30 to clarify the method of defining the plasma cutting process. Amended claim 30 now specifies a method that both allows initiation prevention of the plasma cutting process based on the component detected and automatically adjusts an operating parameter based on the sensed characteristic of the component.

With respect to claim 30, the Examiner again stated that "it would have been obvious to modify the Blankenship system to sense individual components and vary the cutting parameters accordingly." *Office Action, May 2, 2006, p. 2.* However, as explained above with respect to claim 18, while Blankenship may disclose identifying a torch assembly and adjusting operating parameters and Remy may disclose identifying a torch subassembly, such as a consumable, and authorizing or prohibiting current supply, a combination of the two references fails to teach or suggest a method that changes operating parameters based on a fixed component within a plasma

torch. Accordingly, that which is called for in claims 30 is not shown, disclosed, taught, or suggested in the art of record. As such, Applicant believes claim 30 and all claims that depend therefrom are patentably distinct over the art of record.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 18-37.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

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[1]The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-2623. Should no proper payment be enclosed herewith, as by credit card authorization being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-2623. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extensions under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-2623. Please consider this a general authorization to charge any fee that is due in this case, if not otherwise timely paid, to Deposit Account No. 50-2623.